

**To:** Young, David[Young.David@epa.gov]; Marko, Katharine[Marko.Katharine@epa.gov]  
**Cc:** Ex. 6 - Personal Privacy  
**From:** Swain, Ed (MPCA)  
**Sent:** Mon 8/10/2015 5:22:29 PM  
**Subject:** RE: more sulfide stuff

David, I did receive the powerpoint file you sent on August 7th, and an earlier file on August 5th, and obviously the email below.

Thank you for your efforts to share your research and data.

Our field surveys were very focused on the macrophytes and did not attempt to sample benthic invertebrates. Our mandate was clear: to re-evaluate the existing sulfate standard to protect wild rice, and not to figure out how sulfate/sulfide affect other components of the aquatic ecosystem.

There are multiple ways to transfer large files that my state email doesn't accept, but a simple option to try

**Ex. 6 - Personal Privacy**

Ed

Edward Swain  
 Minnesota Pollution Control Agency  
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 651-757-2772

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**From:** Young, David [Young.David@epa.gov]  
**Sent:** Monday, August 10, 2015 11:59 AM  
**To:** Marko, Katharine  
**Cc:** Swain, Ed (MPCA)  
**Subject:** RE: more sulfide stuff

Katie,

Yes, I measured a) 2-D (aerial) and 3-D (> 100% eelgrass+BGM in eelgrass beds) percent cover and b) above-ground biomass for c) eelgrass [*Z. marina*] and d) benthic green macroalgae [*Ulva* spp.], almost every summer-fall low tide from June 1999 through Oct-Nov. 2002 [four intensive years, plus summer 2003], for ~17 bathymetric line stations between the ~0 foot contour (Mean Lower Low Water), 30 meters into the intertidal eelgrass bed (3 lines), up to the rocky upper intertidal, for both Site 2 (Idaho Point – high late summer pore water sulfides -), and Site 3 (Coquille Point – no pore water sulfides). I'm trying to send you and Ed the data, but my 27 MB PP showing the inverse relationship between Site 2 mid-intertidal zone *Ulva* biomass and high sulfides, and low near-surface amphipods, and Site 3 – low sulfides and high amphipods, keeps bouncing back. I may mail a poster to each of you. It would help to know if either of you actually received my PP file on the BGM-Sulfide-Amphipod presentation.

In the meantime, I am sending you this Excel files with charts – obviously, lots of data. Even some shoot counts, which I never finished analyzing. For scientific purposes, use at will.

PS: In this EXCEL file, look at the "Eelgrass" worksheet and find the eelgrass biomass, percent cover, and shoot count plots for 1999-2003. I can help you interpret other data sets here.

Dave  
 WED/PCEB Guest Worker  
**From:** Marko, Katharine  
**Sent:** Friday, August 07, 2015 3:

21 PM  
**To:** Young, David

Subject: RE: more sulfide stuff

Dave,

All of your emails came through, thanks. I am in the process of going over everything now. Did you also do seagrass %cover or shoot counts in the 2000 survey? That data might be helpful if you have it.

Thanks and have a good weekend,  
Katie

From: Young, David  
Sent: Friday, August 07, 2015 5:10 PM  
To: Swain, Ed (MPCA)  
Cc: Marko, Katharine  
Subject: more sulfide stuff